

OPP OFFICIAL RECORD  
HEALTH EFFECTS DIVISION  
SCIENTIFIC DATA REVIEWS  
EPA SERIES 361

2



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

2/5/2003

**Memorandum**

**Subject:** PP#2E06507; Cyromazine in/on Bulb Vegetables. Review of Residue Data and Analytical Methodology.

DP Barcode:	D285751	PRAT Case:	295479
Submission No.:	S622179	Caswell No.:	167B
Chemical No.:	121301	Class:	Insecticide
Trade Name:	Trigard	EPA Reg No.:	100-654
40 CFR:	§180.414		
MRID No.:	457576-01		
	457576-02		

TO: Robert Forrest/Shaja Brothers, PM Team 05  
RD (7505C)

FROM: William D. Wassell, Chemist  
RAB3/HED (7509C)

THRU: Stephen C. Dapson, Branch Senior Scientist  
RAB3/HED (7509C)

  
02/07/2003

**Background:**

The petitioner, G. M. Markle, Associate Director, Interregional Research Project Number 4 (IR-4), on behalf of the IR-4 Project and the Agricultural Experiment Station of Colorado, Florida, Hawaii, Indiana, New Jersey, Oregon, and Texas, and USDA-ARS Research Centers in California, Georgia, Ohio, and Washington, proposes the establishment of a tolerance for residues of cyromazine (N-cyclopropyl-1,3,5-triazine-2,4,6-triamine) in/on Bulb Vegetables, Group 3, at 3.0 ppm and to delete tolerances for residues of cyromazine in/on dry bulb onion at 2.0 ppm and green onion at 0.1 ppm. Bulb Vegetables, Group 3, are defined in 40 CFR §180.41 as garlic, great-headed garlic, leek, dry bulb onion, green onion, Welch onion, shallot, spring onion or scallions, and Japanese bunching onion.

Tolerances are established (40 CFR §180.414) for residues of cyromazine in or on a variety of commodities ranging from 0.05 ppm (livestock commodities) to 7.0 ppm (leafy vegetables) and including



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**WASHINGTON, D.C. 20460**

**OFFICE OF  
 PREVENTION, PESTICIDES  
 AND TOXIC SUBSTANCES**

2/5/2003

**Memorandum**

**Subject:** PP#2E06507; Cyromazine in/on Bulb Vegetables. Review of Residue Data and Analytical Methodology.

DP Barcode:	D285751	PRAT Case:	295479
Submission No.:	S622179	Caswell No.:	167B
Chemical No.:	121301	Class:	Insecticide
Trade Name:	Trigard	EPA Reg No.:	100-654
40 CFR:	§180.414		
MRID No.:	457576-01		
	457576-02		

**TO:** Robert Forrest/Shaja Brothers, PM Team 05  
 RD (7505C)

**FROM:** William D. Wassell, Chemist  
 RAB3/HED (7509C)

**THRU:** Stephen C. Dapson, Branch Senior Scientist  
 RAB3/HED (7509C)

**Background:**

The petitioner, G. M. Markle, Associate Director, Interregional Research Project Number 4 (IR-4), on behalf of the IR-4 Project and the Agricultural Experiment Station of Colorado, Florida, Hawaii, Indiana, New Jersey, Oregon, and Texas, and USDA-ARS Research Centers in California, Georgia, Ohio, and Washington, proposes the establishment of a tolerance for residues of cyromazine (N-cyclopropyl-1,3,5-triazine-2,4,6-triamine) in/on Bulb Vegetables, Group 3, at 3.0 ppm and to delete tolerances for residues of cyromazine in/on dry bulb onion at 2.0 ppm and green onion at 0.1 ppm. Bulb Vegetables, Group 3, are defined in 40 CFR §180.41 as garlic, great-headed garlic, leek, dry bulb onion, green onion, Welch onion, shallot, spring onion or scallions, and Japanese bunching onion.

Tolerances are established (40 CFR §180.414) for residues of cyromazine in or on a variety of commodities ranging from 0.05 ppm (livestock commodities) to 7.0 ppm (leafy vegetables) and including green onions at

0.1 ppm and dry bulb onions at 2.0 ppm. The tolerances for residues in onions were established in conjunction with PP#5F4576, a petition for a seed treatment use of cyromazine on onions to control onion maggots.

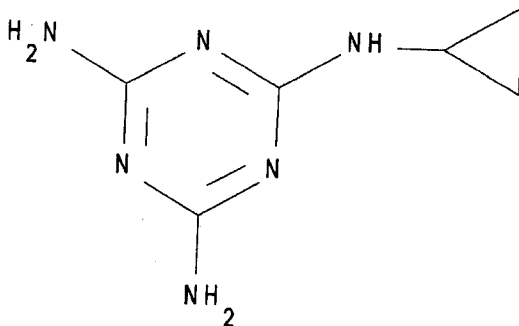


Figure 2: Cyromazine

**Executive Summary of Residue Chemistry Deficiencies:**

\* Revised Section F.

**Conclusions:**

1. All product chemistry data for cyromazine have been previously submitted and reviewed. HED concludes no further product chemistry data are required for this use on bulb vegetables.
- 2a. HED concludes the proposed directions for use of Trigard® Insecticide, EPA Reg. No. 100-654, on bulb vegetables are adequate.
- 2b. The rotational crop restrictions included on the label are adequate as per our previous review of cyromazine (Memo, 11/13/97, A. Rathman, PP#5F4546, D237716).
3. The metabolism of cyromazine has been studied in celery, head lettuce, and tomatoes. HED will translate these data to onions. The residue of concern is the parent compound, cyromazine, as determined by the HED Metabolism Assessment Review Committee on 11/4/97. The metabolism of cyromazine in plants is adequately understood and additional plant metabolism data are not required for the subject petition.
4. Livestock metabolism studies for cyromazine were not submitted in conjunction with this petition. According to OPPTS 860.1000, livestock feed items are not derived from bulb vegetables. Thus, the metabolism of cyromazine in livestock is not of concern for the proposed use on bulb vegetables.

- 5a. Methods AG-408 and AG-417A are the tolerance enforcement methods for cyromazine as published in PAM, Vol. II. These methods combined, and with minor modifications, comprise Method AG-621. The residue data for onions were generated using Method AG-621. Method AG-621 has been adequately validated for use as a data collection method for determination of residues of cyromazine in/on green and dry bulb onions. HED concludes Method AG-408 is adequate for enforcement of the proposed tolerance for residues of cyromazine in/on bulb vegetables.
- 5b. As significant livestock feed items are not derived from bulb vegetables, analytical methods for cyromazine in livestock are not of concern for the proposed use on bulb vegetables.
- 5c. Recovery data for cyromazine via the FDA multiresidue methods have been previously submitted. These data have been forwarded to the FDA. Recovery of cyromazine through Protocol D is marginal.
6. Storage stability data were submitted in conjunction with this petition. HED concludes residues of cyromazine in/on green and dry bulb onions are stable during frozen storage for a maximum of 685 and 746 days, respectively. The maximum storage intervals for samples from the crop field trials were 686 and 716 days for green and dry bulb onions, respectively. The submitted storage stability data are adequate to show that residues of cyromazine did not degrade prior to analysis. For the submitted crop field trials, adjustment of cyromazine residue levels for storage degradation is not required.
- 7a. The petitioner has submitted crop field trial data for cyromazine in/on green and dry bulb onion. Crop field trials for cyromazine in/on green onion were conducted during 1999 in NJ, FL, CA, and HI. Crop field trials for cyromazine in/on dry bulb onion were conducted during 1999 in NJ, TX, OH, IN, WA, OR, CO, and CA (2 trials). All field trials for both commodities were conducted with 6 applications of cyromazine at 0.125 lbs ai/A/application at 5 to 8 day intervals with a 6 to 8 day pre-harvest interval (PHI).
- 7b. HED concludes the geographical representation of the green and dry bulb onion field trials is adequate. Maximum residues of cyromazine in green onions were 0.78 ppm (an average of duplicate samples), while maximum residues in dry bulb onions did not exceed 0.077 ppm (highest value for an individual sample).
- 7c. Residue data for the use of cyromazine in/on onions as a seed treatment use were previously submitted (PP#5F4576). Maximum cyromazine residues on green onions were 1.7 ppm from trials conducted with cyromazine as a seed-treatment and residues of cyromazine in dry bulb onions were a maximum of 0.06 ppm.
- 7d. HED believes the tolerance level for various bulb vegetables should be based upon the sum of the maximum residue levels from both the seed-treatment use and the foliar use. The calculated maximum residue level for cyromazine in/on green onions from both uses would be 2.48 ppm (i.e. 0.78 ppm + 1.7 ppm) and the calculated maximum residue level for cyromazine in/on dry bulb onions from both uses would be 0.14 ppm (i.e. 0.077 ppm + 0.06 ppm).

- 7e. The petitioner has proposed the establishment of a tolerance for residues of cyromazine in/on Crop Group 3 (Bulb Vegetables); however, the residue data for the representative commodities for the crop group are not within 5x. As stated in 40 CFR §180.40(g), if maximum residues for the representative commodities of a crop group vary by a factor of more than 5x, group or subgroup tolerances will ordinarily not be established. It further states that in this case individual crop tolerances will normally be established.
- 7f. HED will translate the crop field trial data from green onion to leek, Welch onion, shallot, spring onion or scallions, and Japanese bunching onion and the data for dry bulb onions to garlic, great-headed garlic, leek, and shallot. **A revised Section F is required in which tolerances for residues of cyromazine are proposed at 3.0 ppm in/on leek, green onion, Welch onion, shallot, spring onion or scallion and Japanese bunching onions and at 0.2 ppm in/on garlic, great-headed garlic, and dry bulb onion.**
8. Codex, Canadian or Mexican Maximum Residue Limits (MRLs) are not established for cyromazine in/on bulb vegetables. Thus, harmonization is not an issue for this minor use petition.

### **RECOMMENDATION**

Pending submission of a revised Section F (Conclusion 7f), HED concludes there are no residue chemistry data requirements that would preclude the establishment of tolerances for residues of cyromazine in/on leek, green onion, Welch onion, shallot, spring onion or scallion and Japanese bunching onions at 3.0 ppm and in/on garlic, great-headed garlic, and dry bulb onion at 0.2 ppm.

HED will now initiate a Human Health Risk Assessment for this use.

### **DETAILED CONSIDERATIONS:**

#### **Product Chemistry/Chemical Identity:**

All product chemistry data for cyromazine have been previously submitted and reviewed (Memoranda, PP#9G2230, A. Rathman, 11/14/79; and PP#5F3177, E. Haeberer, 02/13/85). The description of the starting materials, manufacturing process, formation of impurities, both actual and theoretical, and analysis of various batches of the technical material have been presented and reviewed. Technical grade cyromazine (also referred to as CGA-72662) is 95% pure. HED concludes no further product chemistry data are required for this use on bulb vegetables.

#### **Directions for Use:**

*Existing Use Pattern:* In conjunction with PP# 5F4576, the use of cyromazine as a seed-treatment at the rate of 5 lbs ai per 100 lbs of seed for the control of onion maggots was registered.

*Proposed Use Pattern:* The petitioner has proposed the use of Trigard® Insecticide, EPA Reg. No. 100-654, for the control of leafminers on bulb vegetables (including garlic, great-headed garlic, leek, dry bulb and green onion, Welch onion, shallot, spring onion or scallions, and Japanese bunching onion). This product

contains 75% cyromazine as the active ingredient (ai) and is formulated as a wettable powder in water-soluble packets.

Trigard® is to be applied as a foliar spray at the rate of 1/6 lbs product per acre (0.125 lbs ai/A) in a minimum of 5 gallons of water per acre by air or in a minimum of 10 gallons of water per acre by ground. Applications are to begin when leafminers first appear and may be repeated at 7-day intervals. A 7-day pre-harvest interval (PHI) is proposed. The following restriction is included on the label: do not make more than 6 applications to one crop of bulb vegetable. Do not make the last application within 7 days of harvest (cutting), or illegal residues may occur. The total seasonal application rate is 1.0 lb product per acre (0.75 lbs ai/A).

**Rotational crop restrictions:**

The label for Trigard® allows a 0-day plantback to those crops listed on the label. The label allows a 30-day plantback interval (PBI) for sweet corn, radishes, and cotton and a 300-day PBI for all other crops.

**HED Comments/Conclusions:**

HED concludes the proposed directions for use of Trigard® Insecticide, EPA Reg. No. 100-654, on bulb vegetables are adequate.

The rotational crop restrictions included on the label are adequate as per our previous review of cyromazine (Memo, 11/13/97, A. Rathman, PP#5F4546, D237716).

**Nature of the Residue - Plants:**

Plant metabolism data were not submitted in conjunction with this petition. The metabolism of cyromazine has been studied in celery, head lettuce, and tomatoes (Memo, E. Haeberer, PP#5G3176, 2/4/85; Memo, C. Dyrup, PP#5F3180, 3/20/85; and Memo, C. Dyrup, PP#6F3329 1/28/87).

The plant metabolism data for cyromazine has been presented to the HED Metabolism Assessment Review Committee (MARC, meeting date: 11/4/97). The MARC determined that the residue of concern in plant commodities is the parent compound, cyromazine (Memo, 4/15/98 J.B. Stokes, D245214).

The primary route for cyromazine plant metabolism is dealkylation of cyromazine to form melamine and cyclopropane. Small amounts of several more polar metabolites form as plants approach maturity. Cyromazine residues in the soil are taken up by crops and translocated to the edible portion of the plants. Melamine forms rapidly.

**HED Comments/Conclusions:**

The metabolism of cyromazine has been studied in celery, head lettuce, and tomatoes. HED will translate these data to bulb vegetables. The residue of concern is the parent compound cyromazine as determined by the HED MARC on 11/4/97. The metabolism of cyromazine in plants is adequately understood and additional plant metabolism data are not required for the subject petition.

**Nature of the Residue - Livestock:**

Livestock metabolism studies for cyromazine were not submitted in conjunction with this petition. According to OPPTS 860.1000, significant livestock feed items are not derived from bulb vegetables. Thus, the metabolism of cyromazine in livestock is not of concern for the proposed use on bulb vegetables.

**Residue Analytical Methods:**

**Plant Commodities:** Methods AG-408 and AG-417A are the tolerance enforcement methods for cyromazine as published in PAM, Vol. II. These methods combined, and with minor modifications, comprise Method AG-621. The residue data for green onion and dry bulb onion were generated using Method AG-621.

The analytical method is described as follows: The crop matrix is extracted at reflux in 10% methanol:water. After cooling, the extract is acidified with dilute acid, partitioned with organic solvents, and then the water solubles are passed through an ion exchange column and a silica gel column for final cleanup before analysis. The analysis of samples is by gas chromatography with a nitrogen/phosphorus detector in the nitrogen specific mode. The limit of quantification as demonstrated by fortification recovery data is 0.05 ppm for cyromazine in green and dry bulb onions. The fortification recovery data are summarized in Table 1.

Table 1. Fortification Recovery of Cyromazine from Green and Dry Bulb Onions by Method AG-621			
Matrix	Fortification Level (ppm)	Statistics	
Green Onion	0.05	Average	122%
		Recovery Range	109 to 135% (125, 135, & 131%) <sup>1</sup>
		Standard Deviation (n-1)	8.07%
		Number	7
	0.50	Average	93.7%
		Recovery Range	62.5 to 115% (62.5%)
		Standard Deviation (n-1)	16.4%
		Number	7
	5.0	Average	84.7%
		Recovery Range	71.9 to 108%
		Standard Deviation (n-1)	12.2%
		Number	5
	Overall	Average	102%
		Recovery Range	62.5 to 135%
		Standard Deviation (n-1)	20.5
		Number	19



Table 1. Fortification Recovery of Cyromazine from Green and Dry Bulb Onions by Method AG-621			
Matrix	Fortification Level (ppm)	Statistics	
Dry Bulb Onion	0.05	Average	104%
		Recovery Range	77 to 138 (135, 121, 123, & 138)
		Standard Deviation (n-1)	16.8%
		Number	21
	0.50	Average	99.6%
		Recovery Range	71 to 124 (124)
		Standard Deviation (n-1)	20.4%
		Number	5
	5.0	Average	104%
		Recovery Range	87.7 to 113%
		Standard Deviation (n-1)	11.5%
		Number	3
	Overall	Average	104%
		Recovery Range	71 to 138%
		Standard Deviation (n-1)	17.1%
		Number	29

<sup>1</sup>Recoveries not within a range of 70 to 120% are listed separately.

**HED Comments/Conclusions:**

**Plant Commodities:** Methods AG-408 and AG-417A are the tolerance enforcement methods for cyromazine as published in PAM, Vol. II. These methods combined, and with minor modifications, comprise Method AG-621. The residue data for green and dry bulb onions were generated using Method AG-621. Method AG-621 has been adequately validated for use as a data collection method for determination of residues of cyromazine in/on green and dry bulb onion. Additionally, HED concludes Method AG-408 is adequate for enforcement of the proposed tolerance.

**Livestock Commodities:** As significant livestock feed items are not derived from bulb vegetables, analytical methods for cyromazine in livestock are not of concern for the proposed use on bulb vegetables.

**Multiresidue Methods:**

Recovery data for cyromazine via the FDA multiresidue methods have been previously submitted. These data have been forwarded to the FDA. Recovery of cyromazine through Protocol D is marginal (Memo, 7/16/93, F.D. Griffith, D192978).

**Storage Stability:** (MRID No. 452203-01)

Storage stability data were submitted in conjunction with this petition. Untreated control samples of green and dry bulb onions were fortified with cyromazine at 0.5 ppm and analyzed after frozen storage of 678 and 646 days, respectively. Two fortification recovery samples were analyzed with the stored samples and served as the fresh recovery sample. The maximum storage intervals for samples from the crop field trials were 686 and 716 days for green and dry bulb onions, respectively. The results of the storage stability studies are summarized in Table 2.

Sample Matrix	Storage Period (Days)	Fortification Level (ppm)	Storage Recovery	Fresh Recovery	Corrected Recovery in Stored Sample <sup>1</sup>
Green Onion	685	0.5	119%	91.3%	130%
		0.5	110%		120%
		0.5	115%		126%
Dry Bulb Onion	746	0.5	98.4%	76.5%	129%
		0.5	107%		140%
		0.5	107%		140%

<sup>1</sup> Corrected Recovery in Stored Sample =  $\frac{\text{Storage Recovery}}{\text{Fresh Recovery}} \times 100\%$

**HED Comments/Conclusions:**

HED concludes residues of cyromazine in/on green and dry bulb onions are stable during frozen storage for a maximum of 685 and 746 days, respectively. The maximum storage intervals for samples from the crop field trials were 686 and 716 days for green and dry bulb onions, respectively. These storage stability data are adequate to show that residues of cyromazine did not degrade prior to analysis. For the submitted crop field trials, adjustment of cyromazine residue levels for storage degradation is not required.

**Crop Field Trial Data:**

*Green Onion* (MRID No. 457576-01): The petitioner has submitted crop field trial data for cyromazine in/on green onion. The submitted study is identified as:

457576-01 (8/22/2002) Markle, G.M. Cyromazine: Magnitude of the Residue On Onion (Green). IR-4 Study No. 07238. Unpublished study prepared and submitted by IR-4. 192 p.

Crop field trials for cyromazine in/on green onion were conducted during 1999 in NJ, FL, CA, and HI. All field trials were conducted with 6 applications of cyromazine at 0.125 lbs ai/A/application at 6 to 8 day intervals with a 7 or 8 day pre-harvest interval (PHI). An untreated control plot was also maintained at each site. Duplicate samples of green onions were collected at maturity from all plots and were analyzed for residues of cyromazine. All samples were analyzed according to Method AG-621 (described above). Residue levels of cyromazine in the untreated samples were not detected (<0.05 ppm). The results of the crop field trials are summarized in Table 3.

Field Trial Location and ID	EPA Region	# of apps	Days Between apps	App Rate (lbs ai/A)	Total App Rate (lbs ai/A)	PHI (days)	Residue Levels (ppm) (Average)
Bridgeton, NJ 99-NJ08	2	6	7 to 8	0.125	0.75 (1x)	8	0.29, 0.31 (0.30)
Gainesville, FL 99-FL14	3	6	7	0.117 to 0.125	0.75 (1x)	7	0.59, 0.92 (0.76)
Salinas, CA 99-CA*35	10	6	6 to 7	0.125	0.75 (1x)	8	0.25, 0.26 (0.26)
Waimanalo, HI 99-HI01	13	6	7	0.125	0.75 (1x)	7	0.70, 0.86 (0.78)

*Dry Bulb Onion* (MRID No. 457576-02): The petitioner has submitted crop field trial data for cyromazine in/on dry bulb onion. The submitted study is identified as:

457576-02 (8/22/2002) Markle, G.M. Cyromazine: Magnitude of the Residue On Onion (Dry Bulb). IR-4 Study No. 07239. Unpublished study prepared and submitted by IR-4. 271 p.

Crop field trials for cyromazine in/on dry bulb onion were conducted during 1999 in NJ, TX, OH, IN, WA, OR, CO, and CA (2 trials). All field trials were conducted with 6 applications of cyromazine at 0.125 lbs ai/A/application at 5 to 8 day intervals with a 6 or 7 day pre-harvest interval (PHI). An untreated control plot was also maintained at each site. Duplicate samples of dry bulb onions were collected on the day of harvest from all five trials. For trials conducted in WA, IN, OR, and CO, the onions were left in the field to dry for 5 to 13 days prior to collection. All samples were analyzed according to Method AG-621 (described above). Residue levels of cyromazine in the untreated samples were not detected (<0.05 ppm). The results of the crop field trials are summarized in Table 4.

Table 4. Results of Field Trials for Cyromazine in/on Dry Bulb Onion.

Field Trial Location and ID	EPA Region	# of apps.	Days Between apps.	App. Rate (lbs ai/A)	Total App. Rate (lbs ai/A)	PHI (days)	Residue Levels (ppm)
Bridgcton, NJ 99-NJ09	2	6	6 to 8	0.125	0.75 (1x)	7	<0.050, <0.050
Weslaco, TX 99-TX09	6	6	6 to 8	0.125	0.75 (1x)	7	<0.050, <0.050
Celeryville, OH 99-OH*03	5	6	6 to 8	0.125	0.75 (1x)	7	<0.050, <0.050
Lafaycttc, IN 99-IN01	5	6	5	0.125	0.75 (1x)	7	<0.050, <0.050
Moxee, WA 99-WA*04	11	6	6 to 8	0.125	0.75 (1x)	6	<0.050, <0.050
Aurora, OR 99-OR06	12	6	7 to 8	0.125	0.75 (1x)	6	<0.050, <0.050
La Sallc, CO 99-CO03	8	6	6 to 7	0.117 to 0.125	0.75 (1x)	6	<0.050, <0.050
Salinas, CA 99-CA*133	10	6	6 to 8	0.125	0.75 (1x)	7	<0.050, 0.077
Salinas, CA 99-CA*134	10	6	6 to 8	0.125	0.75 (1x)	7	<0.050, 0.076

*Existing tolerances:* Tolerances are currently established (40 CFR §180.414) for residues of cyromazine in/on green onions at 0.1 ppm and dry bulb onions at 2.0 ppm. Data for onions (green and dry bulb) were submitted in conjunction with PP# 5F4576 (Memo, 7/9/96, J.B. Stokes, D225580). This petition proposes the use of cyromazine as a seed-treatment at the rate of 5 lbs ai per 100 lbs of seed for the control of onion maggots. A total of eleven trials at the 1x and 2x application rate were submitted. Maximum cyromazine residues on green onions were 1.7 ppm from trials conducted with the 1x rate and were 2.0 ppm from 2x trials. Cyromazine residues in dry bulb residues were a maximum of 0.06 ppm at the 1x rate and <0.05 ppm at the 2X rate. The crop field trial data from PP#5F4576 are summarized in Appendix II (Table 5) of this document.

Based upon these data, HED concluded that the tolerance level for residues in/on onion, green should be 2.0 ppm and for residues in/on onion, dry bulb should be 0.1 ppm.

**HED Comments/Conclusions:**

HED concludes the geographical representation of the green and dry bulb onion field trials is adequate. Maximum residues of cyromazine in green onions were 0.78 ppm (an average of duplicate samples), while maximum residues in dry bulb onions did not exceed 0.077 ppm (highest value for an individual sample).

Maximum cyromazine residues on green onions were 1.7 ppm from trials conducted with cyromazine as a seed-treatment and residues of cyromazine in dry bulb residues were a maximum of 0.06 ppm.

HED believes the tolerance level for various bulb vegetables should be based upon the sum of the maximum residue levels from both the seed-treatment use and the foliar use. The calculated maximum residue level for cyromazine in/on green onions from both uses would be 2.48 ppm (i.e. 0.78 ppm + 1.7 ppm) and the calculated maximum residue level for cyromazine in/on dry bulb onions from both uses would be 0.14 ppm (i.e. 0.077 ppm + 0.06 ppm).

The petitioner has proposed the establishment of a tolerance for residues of cyromazine in/on Crop Group 3 (Bulb Vegetables); however, the residue data for the representative commodities for the crop group are not within 5x. As stated in 40 CFR §180.40(g), if maximum residues for the representative commodities of a crop group vary by a factor of more than 5x, a group or subgroup tolerances will ordinarily not be established. It further states that in this case individual crop tolerances will normally be established.

HED will translate the crop field trial data from green onion to leek, Welch onion, shallot, spring onion or scallions, and Japanese bunching onion and the data for dry bulb onions to garlic, great-headed garlic, leek, and shallot. A revised Section F is required in which tolerances for residues of cyromazine are proposed at 3.0 ppm in/on leek, green onion, Welch onion, shallot, spring onion or scallion and Japanese bunching onions and at 0.2 ppm in/on garlic, great-headed garlic, and dry bulb onion.

**International Harmonization Issues:**

Codex, Canadian or Mexican Maximum Residue Limits (MRLs) are not established for cyromazine in/on bulb vegetables. Thus, harmonization is not an issue for this minor use petition.

- Appendices: I. International Residue Limit Status Sheet.  
II. Crop Field Trial Data for the Use of Cyromazine on Onions as a Seed-treatment (Table 5.).

cc: W.D. Wassell, RAB3 Reading File.  
RDI: RAB3 ResChem Team: 1/21/2003; SDapson: 2/5/2002

**INTERNATIONAL RESIDUE LIMIT STATUS**

Chemical Name: N-cyclopropyl-1,3,5-triazine-2,4,6-triamine	Common Name: Cyromazine	<input type="checkbox"/> Proposed tolerance <input checked="" type="checkbox"/> Reevaluated tolerance <input type="checkbox"/> Other	Date: 1/28/2003
Codex Status (Maximum Residue Limits)		U. S. Tolerances	
<input type="checkbox"/> No Codex proposal step 6 or above <input checked="" type="checkbox"/> No Codex proposal step 6 or above for the crops requested		Petition Number: 2E06507 DP Barcode: D285751 Other Identifier: none	
Residue definition (step 8/CXL):cyromazine		Reviewer/Branch: W. D. Wassell	
		Residue definition: cyromazine only	
Crop (s)	MRL (mg/kg)	Crop(s)	Tolerance (ppm)
		Bulb vegetables	3.0
Limits for Canada		Limits for Mexico	
<input type="checkbox"/> No Limits <input type="checkbox"/> No Limits for the crops requested		<input type="checkbox"/> No Limits <input checked="" type="checkbox"/> No Limits for the crops requested	
Residue definition: cyromazine and the metabolite 1,3,5-triazine-2,4,6-triamine		Residue definition: cyromazina	
Crop(s)	MRL (mg/kg)	Crop(s)	MRL (mg/kg)
onion (dry)	0.3		
onion (green)	3.		
Notes/Special Instructions: S.Funk, 01/29/03.			

Rev. 1998

Appendix II:

Table 5. Crop Field Trial Data for the Use of Cyromazine on Onions as a Seed-treatment (from PP#5F4576)				
Site	Residues of Cyromazine (ppm)			
	Seed, Pelleted	Whole Plant	Fresh Bulb	Dried Bulb
NY	9600	0.43, 0.44	<0.05, <0.05	<0.05, <0.05
NY (2X)	21000	0.76	<0.05	<0.05
MI	10800	0.24, 0.43	<0.05, <0.05	<0.05, <0.05
TX	8000, 10400	0.36, 0.33	<0.05, <0.05	<0.05, <0.05
GA	6600	0.06, 0.11	<0.05, <0.05	<0.05, <0.05
CA	10000, 10200	0.74, 0.91	0.06, <0.05	0.06, <0.05
CA (2X)	20300, 17900	2.0	0.13	<0.05
CO	8600	1.7, 1.7	<0.05, <0.05	<0.05, <0.05
OR	14,100, 12,400	0.14, 0.18	<0.05, <0.05	<0.05, <0.05
OR (2X)	22,200, 22,200	0.39	<0.05	<0.05
ID	11,500	0.30, 0.23	<0.05, <0.05	<0.05, <0.05
Average (1X)	10,200	0.52	<0.05	<0.05
Average (2X)	20,700	1.05	<0.08	<0.05
Maximum (1X)	14,100	1.7	0.06	0.06
Maximum (2X)	22,200	2.0	0.13	<0.05

\* PHI's: seed, pelleted, 1 to 41 days; whole plant, 60 to 75 days; bulbs, fresh and dried, 98 to 207 days